

HOW TO TRAIN A DRAGON:
HOW THE PEOPLES LIBERATION ARMY AIR FORCE (PLAAF)
MODERNIZES TO FIGHT AND WIN WARS

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APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.



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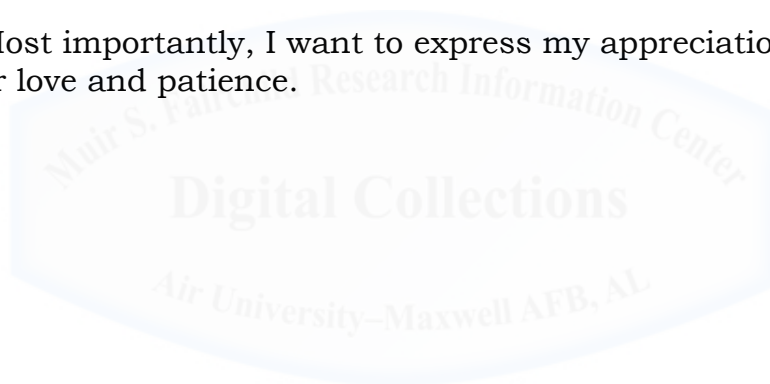
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ABSTRACT

In November 2011, when former Secretary of State Hillary Clinton published “America’s Pacific Century” in *Foreign Policy* magazine, the Obama Administration was unmistakably acknowledging a transformation in US foreign policy. This article described the beginnings of a United States “pivot” away from Europe, and to a lesser degree the Middle East, toward the Asia-Pacific region. The 2012 Defense Strategic Guidance codifies that shift in US foreign policy and renewed interest in US Asia-Pacific strategy, to include the capabilities of the regional power, China.

This purpose of this research is to evaluate internal modernization efforts of the People’s Liberation Army Air Force (PLAAF). By evaluating these internal criteria, this thesis attempts to answer the following research question: To what extent do the modernization efforts of the PLAAF enable it to fight and win wars? To tackle this question, the research first attempts to identify historical changes to China’s strategic cultural development, political progression, and military modernization. Second, the research identifies changes to PLAAF organization, recruitment, education, training, and leadership structures. Finally, the research examines recent initiatives to bolster military professionalism, pilot autonomy, and joint operations.

It is the author’s thesis is that modernization efforts have introduced significant improvements in the PLAAF’s ability to organize, train, and equip, however, institutional barriers prevent the PLAAF from transitioning into a joint-capable and autonomous offensive and defensive force. These barriers to change will continue to inhibit the PLAAF’s formidability and preeminence for the near future despite increases in investment and leadership directives.

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Chapter 1

Introduction

*U.S. economic and security interests are inextricably linked to developments in the arc extending from the Western Pacific and East Asia into the Indian Ocean region and South Asia, creating a mix of evolving challenges and opportunities. Accordingly, while the U.S. military will continue to contribute to security globally, **we will of necessity rebalance toward the Asia-Pacific region***

2012 Defense Strategic Guidance

In November 2011, when former Secretary of State Hillary Clinton published “America’s Pacific Century” in *Foreign Policy* magazine, the Obama Administration unmistakably acknowledged a transformation in US foreign policy. This article describes the beginnings of a United States “pivot” away from Europe, and to a lesser degree the Middle East, toward the Asia-Pacific region.¹ The 2012 *Defense Strategic Guidance* codified that shift in US foreign policy and renewed interest in US Asia-Pacific strategy, which includes the capabilities of the regional power, China.² In August of 2014, Pacific Air Force (PACAF), as an item of interest, requested further research on the People’s Liberation Army Air Force (PLAAF) to provide additional sources of academic rigor for future strategy development and foster the growth of expertise within the United States Pacific Command (USPACOM) area of responsibility.

Problem Background and Significance

Xiaoming Zhang, in his book, *Red Wings over the Yalu*, describes a speech given by General Hoyt S. Vandenberg, who had recently returned from a tour in the East Asia during the Korean War. The general was

¹ Hillary Clinton, “America’s Pacific Century,” *Foreign Policy*, October 2011, <http://foreignpolicy.com/2011/10/11/americas-pacific-century/>.

² Office of Secretary of Defense, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense*, (Washington, DC: Office of Secretary of Defense, January 2012), 2. Bold lettering of a portion of quote highlights italicized portion of original source for emphasis.

troubled, declaring that Communist China had “become one of the major air powers of the world” seemingly overnight.³ How could this unknown air force go from relative obscurity to challenging the United Nations air superiority over Korea? Is a similar paradigm shift possible as China further develops an anti-access strategy against the United States’ and other Asia-Pacific actors? With the rise of Chinese political, military and economic influence driving a United States pivot to the Pacific, the requirement to understand these issues becomes more apparent.

Research Question and Thesis

The intent of this research is not to evaluate the PLAAF order-of-battle (number of 4th or 5th generation aircraft, etc.) or relative strengths in technology, manpower, and resources but to focus on internal characteristics that may or may not affect the formidability and preeminence of the PLAAF within the People’s Liberation Army (PLA).⁴ By evaluating these internal criteria, this thesis attempts to answer the following research question: To what extent do the modernization efforts of the PLAAF enable it to fight and win wars?⁵ Modernization efforts have introduced significant improvements in the PLAAF’s ability to organize, train, and equip, however, institutional barriers prevent the PLAAF from transitioning from a territorial-focused and centralized-controlled defensive instrument to a joint-capable and autonomous offensive and defensive force. Thomas P. Hughes in his book, *Rescuing Prometheus*, introduces the concept of “institutional inertia” or “conservative momentum.”⁶ He suggests that, “Not only do human values and routines anchor organizations, but physical objects with specific characteristics

³ Xiaoming Zhang, *Red Wings Over the Yalu China, the Soviet Union, and the Air War in Korea* (College Station, TX: Texas A&M University Press, 2002), 12; John Andreas Olsen, ed., *Global Air Power*, 1st ed (Washington, D.C: Potomac Books, 2011), 259.

⁴ PLA represents the entire Chinese military force, not only the respective ground force.

⁵ James C. Mulvenon, “Military Themes from the 2013 National People’s Congress,” *Hoover Institution: Chinese Leadership Monitor* Issue 41 (June 6, 2013): 5, <http://www.hoover.org/research/military-themes-2013-national-peoples-congress>.

⁶ Thomas P Hughes, *Rescuing Prometheus*, 1st ed (New York: Pantheon Books, 1998), 77.

generate a resistant mass in favor of the status quo.”⁷ The Meriam-Webster Dictionary defines inertia as “lack of movement or activity especially when movement or activity is wanted or needed.”⁸ Faced with institutional tendencies to resist change and favor the status quo, China’s desire to expand its security interests beyond its borders presents challenges. Despite modernization efforts, cultural, political, and military barriers to change create an institutional inertia, which may limit PLAAF efforts to become a formidable and preeminent force for the near future.

Methodology

Research Design

The Chinese population has had long held beliefs that they are descendants of the dragon, a tradition that is firmly embedded in culture and one that is encountered across all aspects of Chinese society. Seen as a symbol of malevolence in some western cultures, the dragon symbolizes self-respect and power for good in China.⁹ Using the dragon metaphor as the impetus of change in modernizing the PLAAF, this research identifies three themes: (1) the dragon matures, (2) the dragon learns to fly, and (3) the dragon learns to fight and win. The research first attempts to identify historical changes to China’s strategic cultural development, political progression, and military modernization. Second, the research identifies changes to PLAAF organization, recruitment, education, training, and leadership structures. Finally, the research examines recent initiatives to bolster military professionalism, pilot autonomy, and joint operations.

⁷ Hughes, *Rescuing Prometheus*, 77.

⁸ “Inertia - Definition and More from the Free Merriam-Webster Dictionary,” accessed April 11, 2015, <http://www.merriam-webster.com/dictionary/inertia>.

⁹ “Chinese Dragon: Culture on Dragon, Phoenix, Kylin, Tortoise,” *TravelChinaGuide.com*, accessed March 28, 2015, http://www.travelchinaguide.com/intro/social_customs/dragon_lion.htm.

Key Questions

The following key questions will aid the author in evaluating the research question and thesis:

1. How has history shaped China's cultural, political, and military apparatus?
2. What internal improvements has the PLAAF undertaken to modernize its force?
3. What limiting factors affect the PLAAF's ability to fight and win wars?
4. What impact does this have on United States power projection in the Pacific?

Data Collection Strategy

The specific body of material used to research this topic consisted of scholarly journal articles, essays, white papers, symposium papers, briefings, and published books. In a jointly funded endeavor between PACAF and Air University, the author traveled to Camp Smith and Joint Base Pearl Harbor-Hickam to conduct seminar styled discussions with PACAF and USPACOM leaders, planners, and action officers. The trip included specialized research in PACAF's Leidos Library and with subject matter experts at the Daniel K. Inouye Asia-Pacific Center for Security Studies. The intent was to enable the author to conduct in-depth and relevant research with PACAF and USPACOM staffs that would not be possible at Air University. The author also attended a PLA conference in Washington DC to conduct interviews with leading US experts on PLA/PLAAF topics.

Structure

Chapter Two: The Dragon Matures

This chapter traces the origins of China from its cultural development, political progression, and modernization of its military apparatus. In isolation, these factors cannot completely elucidate the traits and qualities that the Chinese value in developing an air power component.

Chapter Three: The Dragon Learns To Fly

This chapter examines internal modernization efforts, centering on changes in organization, recruitment, education and training, and leadership in order to become an effective flying force.

Chapter Four: The Dragon Learns To Fight and Win

This chapter focuses on three important themes that are necessary for the PLAAF to fight and win its nations wars. Those themes, (1) military professionalism, (2) pilot autonomy, and (3) joint operations, are critical components to train and conduct the emerging PLAAF mission requirements effectively.

Chapter Five: Conclusions and Recommendations

Finally, this chapter evaluates the internal characteristic changes and identifies several improvements and limiting factors within the PLAAF. Chapter Five concludes with recommendations for future PLA capability studies.

Literature Review

During the course of researching this topic, numerous sources aided the author in writing this thesis. Along with the 2012 *Defense Strategic Guidance*, the 2014 *Quadrennial Defense Review* provided an update on China's military modernization efforts and its effect on stability in the region. A portion of that publication addresses modernization:

The Asia-Pacific region is increasingly central to global commerce, politics, and security. Defense spending in this region continues to rise. As nations in the region continue to develop their military and security capabilities, there is greater risk that tensions over long-standing sovereignty disputes or claims to natural resources will spur disruptive competition or erupt into conflict, reversing the trends of rising regional peace, stability, and prosperity. In particular, the rapid pace and comprehensive scope of China's military modernization continues, combined with a relative lack of transparency and openness from China's leaders regarding both military capabilities and intentions.¹⁰

¹⁰ Office of the Secretary of Defense, *Quadrennial Defense Review 2014* (Washington, D.C, n.d.).

The Department of Defense (DoD) Annual Report to Congress, *Military and Security Developments Involving the People's Republic of China 2014*, also addresses this underlying theme of military modernization:

The People's Republic of China (PRC) continues to pursue a long-term, comprehensive military modernization program designed to improve the capacity of its armed forces to fight and win short duration, high-intensity regional contingencies. Preparing for potential conflict in the Taiwan Strait, which includes deterring or defeating third-party intervention, remains the focus and primary driver of China's military investment. However, the Chinese People's Liberation Army (PLA) also is placing emphasis on preparing for contingencies other than Taiwan, including potential contingencies in the South and East China Seas.¹¹

Other scholarly journal articles, essays, white papers, symposium papers, briefings, published books from leading United States and international experts on PLA/PLAAF topics were available. These sources include: *People's Liberation Army Air Force 2010*, *The Chinese Air Force: Evolving Concepts, Roles, and Capabilities*, *The Dragon Extends its Reach*, *Red Wings over the Yalu*, *The Asia-Pacific Century: Challenges and Opportunities*, *Global Air Power*, *The "People in the PLA: Recruitment, Training, and Education in China's Military*, and *Shaking the Heavens and Splitting the Earth: Chinese Air Force Employment Concepts in the 21st Century*.¹² Numerous articles, briefings, and publications by Kenneth Allen, Morgan Clemons, and James Mulvenon were extremely timely and relevant to this topic providing much of the analytical underpinnings for each chapter.

¹¹ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014* (Washington, D.C, April 2014).

¹² National Air and Space Intelligence Center, *People's Liberation Army Air Force 2010* (CreateSpace Independent Publishing Platform, 2013); Richard P. Hallion, Roger Cliff, and Phillip Saunders, *The Chinese Air Force: Evolving Concepts, Roles, and Capabilities*, 2013; Larry M. Wortzel, *The Dragon Extends Its Reach: Chinese Military Power Goes Global*, First edition (Washington, D.C: Potomac Books, 2013); Zhang, *Red Wings Over the Yalu China, the Soviet Union, and the Air War in Korea*; Adam Lowther, ed., *The Asia-Pacific Century: Challenges and Opportunities* (Maxwell Air Force Base, Alabama: Air University Press, Air Force Research Institute, 2013); Olsen, *Global Air Power*; Roy Kamphausen et al., eds., *The "People" in the PLA: Recruitment, Training, and Education in China's Military* (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2008); Roger Cliff, ed., *Shaking the Heavens and Splitting the Earth: Chinese Air Force Employment Concepts in the 21st Century* (Santa Monica, Calif: RAND, 2011).

Chapter 2

The Dragon Matures

China is a country rising like the morning sun

Mao

This chapter will trace the origins of China with respect to cultural development, political progression, and modernization of its military apparatus. In isolation, these factors cannot completely elucidate the traits and qualities that the Chinese value when developing its air component capability. Together, however, they identify a triad of change in the character of air power. Each is as important as the next in transitioning the PLAAF from a territorial-focused and centralized-controlled defensive instrument to a joint-capable and autonomous offensive and defensive force able to fight and win wars. This vision of capability reform begins with its strategic culture.

Andrew Scobell defines strategic culture as, “the fundamental and enduring assumptions about the role of war (both interstate and intrastate) in human affairs and the efficacy of applying force held by political and military elites in a country.”¹ Colin Gray suggests a nation's strategic culture flows from its geography and resources, history and experience, society and political structure.² In general, strategic culture defines the what, why, and how nation-states take up arms. Strategic culture is especially influential in a country like China, with an ancient civilization and strategic tradition dating back thousands of years.

Strategic Cultural Development

Colonel James C. Dawkins, in his Air War College research report *Rising Dragon: Deterring China in 2035* described the cultural bedrocks of the three dominant ideals in China:

¹ Andrew Scobell, “China and Strategic Culture,” *Strategic Studies Institute*, May 2002, 2.

² Colin S. Gray, *Modern Strategy* (New York: Oxford University Press, 1999), chap. 5.

Confucianism, Taoism, and Buddhism form the cultural underpinnings of Chinese thought and action. Confucianism, the most dominant of the three, teaches that “compassion, ritual, and social hierarchy [are the] means to maintain order in Chinese society.” Taoism, an alternative yet complementary school of thought, calls for followers to abstain, “from the futile pursuit of human endeavor, social activity, and individual ambition.” Buddhism forms the last piece of the three part ideology. Introduced by India in the first century AD, “Buddhist(s) seek to escape from the world that brings on human suffering by renouncing individual consciousness and cravings in order to experience an abyss of nothingness.”³

The three religious foundations of Confucianism, Taoism, and Buddhism form the basis of the “mandate from heaven,” a concept that provides theological privilege to the ruling class.⁴ The mandate is an ancient Chinese philosophical concept, which originated during the Zhou Dynasty (1046-256 BC).⁵ The mandate determines whether an emperor of China is sufficiently virtuous to rule—if he does not fulfill his obligations as emperor, then he loses the mandate and thus the right to be emperor.

There are four principles to the mandate: (1) Heaven grants the emperor the right to rule, (2) Since there is only one Heaven, there can only be one emperor at any given time, (3) The emperor's virtue determines his right to rule, and (4) No one dynasty has a permanent right to rule.⁶ The mandate provides a governing framework, “since the conditions for retaining the mandate require effective rule, perceived ineffective rule always provides a potential for overthrow by way of rebellion. Hence, the corollary to the mandate of heaven is the ‘right to

³ James C. Dawkins, Jr. Colonel, USAF, *Rising Dragon: Deterring China in 2035* (Maxwell Air Force Base, Ala.: Air University, February 12, 2009), 17; John P. Geis, II, PhD, Colonel, USAF et al., *Discord or “Harmonious Society”? China in 2030* (Maxwell Air Force Base, Ala.: Air University, 2011), 14, <http://purl.fdlp.gov/GPO/gpo41393>.

⁴ “What Was the Mandate of Heaven?,” *About.com Education*, accessed January 11, 2015, <http://asianhistory.about.com/od/ancientchina/f/What-Is-The-Mandate-Of-Heaven.htm>.

⁵ BC stands for Before Christ, in the Julian and Gregorian calendars, and signifies the time before the birth of Jesus of Nazareth.

⁶ “What Was the Mandate of Heaven?”

rebel.”⁷ The maintaining of order through effective rule has been the foundation of China’s political progression.

Political Progression

The twentieth century is an important transition point in the long history of China. In 1911, a group of politically driven rebels overthrew the Qing Dynasty. Over 2,000 years of imperial rule ended with the ousting of Emperor Pu’yi.⁸ Formed In 1912, the Republic of China fell under the control the Nationalist Party (Kuomintang). Over the next 37 years, China lost much of its external economic and political power. For example, China was responsible for up to 33 percent of the world’s GDP in 1820, but only 5 percent by 1950.⁹ Japanese invasion, the influence of western colonialism, and a dramatic reduction of economic influence led to constant upheaval. In response to this social and economic deprivation, the Nationalist Party under Chang Kai-Shek met a growing opposition. The rise of a communist party, led by Mao Zedong, instituted a three-phased approach to achieve political power. In Phase One, guerrillas earned the population's support through propaganda and mobile warfare against government. Phase Two commenced with escalating attacks launched against the government's military forces and vital institutions. In Phase Three, the communist party took control of the country through conventional military tactics, resulting in many of the major cities to fall and the government to be overthrown. This transition from guerilla warfare to conventional conflict is a useful model in understanding the gradual approach to establish legitimacy and gaining political power.¹⁰ Termed the “peoples-war,” Mao’s forces pushed the Nationalists from mainland China to neighboring Taiwan. This landmark event is still a primary source of contention between the two

⁷ USAF et al., *Discord or “Harmonious Society”?*, 22.

⁸ USAF et al., *Discord or “Harmonious Society”?*, 10.

⁹ USAF et al., *Discord or “Harmonious Society”?*, 72.

¹⁰ Mao Tse-Tung, “On Protracted War,” in *Selected Military Writings of Mao Tse-Tung* (Fort Leavenworth, KS: Combat Studies Institute, n.d.), 187–267.

countries today and was a jump-off point for the formation of the Republic of China. On 1 October 1949, Mao established a modified form of the Marxist-Leninist ideology to end what many scholars call the “Century of Humiliation.”¹¹

The PLA transitioned from a peasant guerilla force to a professionalized army in the 1950s. Mao’s legacy provided two central underpinnings of the PLA’s core warfighting concepts.¹² Alexander Chieh-cheng Huang states, “The concepts of “people’s war” (or military doctrine) and ‘active defense’ (military strategy) are two fundamental components of Mao Zedong’s military thought.”¹³ Some scholars view active defense as a strategy of weakness since it accepts the realization that adversaries will have superior weapons and equipment.¹⁴ RAND’s *Shaking the Heavens and Splitting the Earth* describes this philosophy:

At its most basic level, active defense involves “taking tactically offensive action within a basically defensive strategy.” The parameters within which this strategy can be implemented are broad and can fall between the “active” end of the spectrum and the “passive,” reactive end. The original goal of this strategy was to protect the PRC’s large cities and industrial bases by using offensive operations to wear down an aggressor (in contrast to “passive defense”). As Chinese military capabilities have improved over time, however, the active defense strategy has evolved from stressing the “defense” aspect to stressing the “active” aspect in the form of a more offensively oriented strategy.¹⁵

China’s involvement in the Korean War was a significant step in maturing the country’s active defense strategy. The modern military power employed by the United Nations required China to solidify an alliance with the Soviet Union, which provided advanced weaponry and training. This new era observed the PLA pursue organizational reform

¹¹ Alison A. Kaufman, *The “Century of Humiliation” and China’s National Narratives*, 2011, <http://www.uscc.gov/sites/default/files/3.10.11Kaufman.pdf>.

¹² Cliff, *Shaking the Heavens and Splitting the Earth*, 33.

¹³ James C. Mulvenon et al., *Seeking Truth from Facts: A Retrospective on Chinese Military Studies in the Post-Mao Era* (Santa Monica, CA: National Security Research Division, RAND, 2001), 131.

¹⁴ Dennis J. Blasko, *Chinese Army Today: Tradition and Transformation for the 21st Century*, 2nd ed (New York: Routledge, 2012), 95–96.

¹⁵ Cliff, *Shaking the Heavens and Splitting the Earth*, 33.

and equipment modernization while developing its military tactics, techniques, and procedures to conduct military operations in Tibet, Korea, and along the coastline opposite Taiwan.¹⁶ To the misfortune of the PLA, these reforms were short-lived.

Instead of bolstering economic and military expansion, Mao turned to isolationism and opposed foreign influence to reinstate the cultural heritage of China's long history. Instead of a historical reformation, these actions resulted in greater authoritarian control. From 1958 to 1976, China endured three significant events causing violent political upheaval.¹⁷ First, Mao led the Great Leap Forward (1958) aimed at rapidly transforming the country from an agrarian economy into a socialist society through rapid industrialization and collectivization.¹⁸ Historian Frank Dikötter asserts that "coercion, terror, and systematic violence were the very foundation of the Great Leap Forward" and it "motivated one of the most deadly mass killings of human history."¹⁹ This rapid economic change triggered a great famine and further economic unrest. Second, the Sino-Soviet split (1960), an ideological divergence between the Soviet Union and China's view of Communist values, occurred. The breakup ended a long-standing agreement with the Soviets to train and equip China's struggling military, essentially halting all defense reforms within the country. Lastly, Mao led The Great Proletarian Cultural Revolution (1966-1976) to purge all remains of capitalism, dissolve traditional practices, and establish Maoism as the

¹⁶ Kenneth W. Allen, *China's Air Force Enters the 21st Century* (Santa Monica, CA: Rand, 1995), 7.

¹⁷ Cliff, *Shaking the Heavens and Splitting the Earth*, 34.

¹⁸ "Great Leap Forward," *Wikipedia, the Free Encyclopedia*, January 16, 2015, http://en.wikipedia.org/w/index.php?title=Great_Leap_Forward&oldid=641668066.

¹⁹ Frank Dikötter, *Mao's Great Famine: The History of China's Most Devastating Catastrophe, 1958-1962*, 1st U.S. ed (New York: Walker & Co, 2010), x, xi.

dominant ideology.²⁰ These movements crippled China politically, economically, and militarily.

In 1976, China underwent a transformational effort to bolster its economic and defense apparatus. The “Four Modernizations” were goals first set forth by Zhou Enlai in 1963, and enacted by Deng Xiaoping in 1978. Initiated to strengthen the fields of agriculture, industry, national defense, and science and technology in China, three specific major reforms under Deng proved critical in the advancement of the PLA.²¹ First, China began opening its doors to the outside world through trade and investment in order to increase economic power and prestige. Second, due to the PLA’s poor display in a border conflict with Vietnam in 1979, China initiated a new military modernization strategy. Third, the 1985 Central Military Commission (CMC) proclaimed “a dramatic shift away from the concept of preparing for global war in favor of building rapid-reaction forces to prepare for local wars.”²²

In 1990, in response both to the global backlash from the 1989 Tiananmen Square incident and Chinese leadership’s sense of alarm following the collapse of the Soviet Union, Deng initiated a “24-Character Strategy.”²³ The strategy provided basic principles on how China should protect its national interests while increasing its interactions with the world. According to Manu Sharma, “The key assumption of this strategy is that economic prosperity and stability achieved by the country would afford it greater international influence and diplomatic leverage as well as a robust, modern military. As China’s comprehensive strength is

²⁰ “The Great Proletarian Cultural Revolution in China, 1966-1976,” accessed March 30, 2015, <http://www.sjsu.edu/faculty/watkins/cultrev.htm>.

²¹ “Four Modernizations Era,” accessed January 25, 2015, <http://depts.washington.edu/chinaciv/graph/9confour.htm>.

²² Allen, *China’s Air Force Enters the 21st Century*, 8.

²³ “Deng Xiaoping’s ‘24-Character Strategy,’” accessed March 25, 2015, <http://www.globalsecurity.org/military/world/china/24-character.htm>.

incrementally mounting, its status increases in international affairs.”²⁴ Deng’s brevity in providing his nation’s “grand strategy” is consistent with China’s historical record. Strategic goals and the means to which achieve them, are deliberately vague in order to disguise planning objectives, reconcile disagreements within the party, and project an image of uncertainty or lack of knowledge. Regardless, it is possible to generalize about China’s “grand strategy” based on historical patterns, statements by leadership, white papers, evolution of its military capabilities, and recent diplomatic efforts. The DoD Annual Report to Congress, *Military Power of the People’s Republic of China 2007*, addresses these underlying themes:

At the core of China’s overall strategy rests the desire to maintain the continuous rule of the Chinese Communist Party (CCP). A deep-rooted fear of losing political power shapes the leadership’s strategic outlook and drives many of its choices. As a substitute for the failure of communist ideology, the CCP has based its legitimacy on the twin pillars of economic performance and nationalism. As a consequence, domestic economic and social difficulties may lead China to attempt to bolster support by stimulating nationalist sentiment which could result in more aggressive behavior in foreign and security affairs than we might otherwise expect.²⁵

Over the next 27 years, in subsequent terms of leadership, Jiang Zemin and Hu Jintao continued Deng’s economic expansion and international cooperation. An emphasis toward maintaining power within the PRC and perceived threats to its power projection capabilities, however, has pushed China’s leadership toward less cooperation with its neighbors and the United States. This transition in posture was evident with the election of current PRC President, Xi Jinping.

Xi heads the CMC, an organization consisting of the most senior military leaders and service chiefs all of whom are party members. The CMC is responsible for providing guidance and direction to the Chinese

²⁴ “China Succeeds with 24 Character Policy,” accessed March 25, 2015, <http://www.merineews.com/article/china-succeeds-with-24-character-policy/15785006.shtml>.

²⁵ Office of the Secretary of Defense, *Annual Report to Congress: Military Power of the People’s Republic of China 2007* (Washington, D.C, n.d.), 6.

military forces. The forces consist of the PLA, the Chinese People's Armed Police force, and the People's Militia. The PLA is consists of three professional services and one independent branch: the People's Liberation Army (PLAA)²⁶, the People's Liberation Army Navy (PLAN), Second Artillery Corps (SAC), and the PLAAF. As the world's largest military force, the PLA consists of approximately 2.3 million people, constituting about 0.18% of the country's population.²⁷

Military Modernization

In 2004 then-President, Hu Jintao announced the PLA's "New Historic Missions."²⁸ Codified in 2007, these missions have guided the PLA's modernization and foreign engagement efforts for almost a decade. The missions realign the PLA's tasks with the CMC's strategic objectives and still reflect the leadership's view of China's security situation.²⁹ The missions include:

1. Provide an important guarantee of strength for the party to consolidate its ruling position
2. Provide a strong security guarantee for safeguarding the period of important strategic opportunity for national development
3. Provide a powerful strategic support for safeguarding national interests
4. Play an important role in safeguarding world peace and promoting common development³⁰

Xi Jinping expanded the era of modern Chinese military modernization and based his platform on two premises, "China Dream" and "Fight and Win Wars."³¹ The first is to realize the China Dream, or

²⁶ PLAA represents the Army as a ground force in the traditional sense, while PLA constitutes the entire Chinese military force.

²⁷ "The Dragon's New Teeth," *The Economist*, April 7, 2012, <http://www.economist.com/node/21552193>.

²⁸ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, 16.

²⁹ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, 16.

³⁰ James C. Mulvenon and Morgan Clemons, "Getting into Shape: Xi Jinping's New Guidance to the PLA," 2014, 3–4.

³¹ Mulvenon, "Military Themes from the 2013 National People's Congress," 4–5.

"national rejuvenation, improvement of people's livelihoods, prosperity, construction of a better society and military strengthening."³² This common dream amongst Chinese citizens fits the collective narrative of its culture. Xi, at the first plenary session of the 12th National People's Congress, highlighted the role of the PLA in realizing the dream by outlining a three-part "instruction" to modernize the national defense in order to fight and win wars.³³ James Mulvenon article, "Military Themes from the 2013 National People's Congress," summarizes these instructions to the PLA:

"The party's goal of strengthening the military under the new situation" required "building a military force of the people that obeys the party's command, is able to fight victorious battles, and has a good style."³⁴

The instructions emphasize the party's strict span of control (obey commands), demands militarily proficiency (fight vicious battles), and focuses on improving its work ethic (has a good style). The first premise of Xi's instruction reiterates the historic call for the PLA to be "absolutely loyal" to the party, and to "maintain their purity and reliability."³⁵ The second premise illustrates Xi's use of the PLA to cement his political authority and present a tough stance in growing territorial disputes in the Pacific region. The United States announcement of an Asia-Pacific re-balance exacerbates this instruction leading toward increased military investment. The third and final premise addresses corruption and vigilance against fraud, waste, and abuse. Xi proclaims, "The forces

³² "Can China Deliver the China Dream(s)? - The New Yorker," accessed January 26, 2015, <http://www.newyorker.com/news/letter-from-china/can-china-deliver-the-china-dreams>.

³³ Mulvenon, "Military Themes from the 2013 National People's Congress," 5.

³⁴ Mulvenon, "Military Themes from the 2013 National People's Congress," 2-3.

³⁵ "Xi Urges Armed Forces' Loyalty, Discipline - Xinhua | English.news.cn," accessed March 30, 2015, http://news.xinhuanet.com/english/china/2013-03/11/c_132225857.htm.

should uphold frugality and oppose extravagance and waste, so as to make full use of military spending.”³⁶

Maintaining order through effective rule has driven a military modernization strategy that focuses on controlling its interests in the Asia-Pacific region and beyond. From Mao’s inward approach of active defense to Xi’s outward approach to fight and win wars, China’s strategic cultural development, political progression, and military modernization, are key components in increasing PLAAF capability and lethality. A rejuvenated effort in building a highly professional, educated, and competent force is underway. The following chapters will address these changes, amplify Chinese aggressiveness in the Asia-Pacific region, and further elucidate its implications for the United States.



³⁶ PLA General Logistics Department, “Consolidate the Foundation for Military Strengthening, Promote the Development of Military Logistics Building,” *Qiushi*, no. 6 (March 18, 2013).

Chapter 3

The Dragon Learns to Fly

According to the DoD Annual Report to Congress, *Military and Security Developments Involving the People's Republic of China 2014*:

The PLAAF is the largest air force in Asia and the third-largest air force in the world, with approximately 330,000 personnel and more than 2,800 total aircraft, not including unmanned aerial vehicles (UAV). Of these PLAAF aircraft, approximately 1,900 are combat aircraft (includes fighters, bombers, fighter-attack and attack aircraft), 600 of which are modern. The PLAAF is pursuing modernization on a scale unprecedented in its history and is rapidly closing the gap with Western air forces across a broad spectrum of capabilities including aircraft, command and control (C2), jammers, electronic warfare (EW), and data links. Although it still operates a large number of older second- and third-generation fighters, it will likely become a majority fourth-generation force within the next several years.³⁷

While this current assessment presents a current national security concern for US strategic policy, the history of the PLAAF illustrates a series of success and failures in terms of modernization efforts and capability since its inception on 11 November 1949. This chapter will focus on those modernization efforts and the changes in the PLAAF's organization, recruitment, education, training, and leadership in order to become an effective flying force.

Organization

After the foundation of the PRC, Chinese leadership chose to establish ties with the Soviet Union in order to thwart possible threats from the United States and Japan. This Sino-Soviet relationship drove reorganization along traditional Soviet lines, organizing the PLA in a strict hierarchal structure.³⁸ Figure 1 displays this hierarchical organizational relationship. The CMC as the PLA's command authority, commonly referred to as the "supreme command," is roughly equivalent

³⁷ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, 9.

³⁸ Allen, *China's Air Force Enters the 21st Century*, 14–15.

to the US National Command Authority.³⁹ Four General Departments (GDs) collectively serve to manage all military affairs on behalf of the CMC. The PLAA does not have a separate Army Headquarters (HQ) similar to the PLAN, PLAAF, and SAC. The four GDs exercise the leadership and administrative responsibilities over the Army. Each Military Region HQ exercises direct leadership over the Army units in its military region.⁴⁰

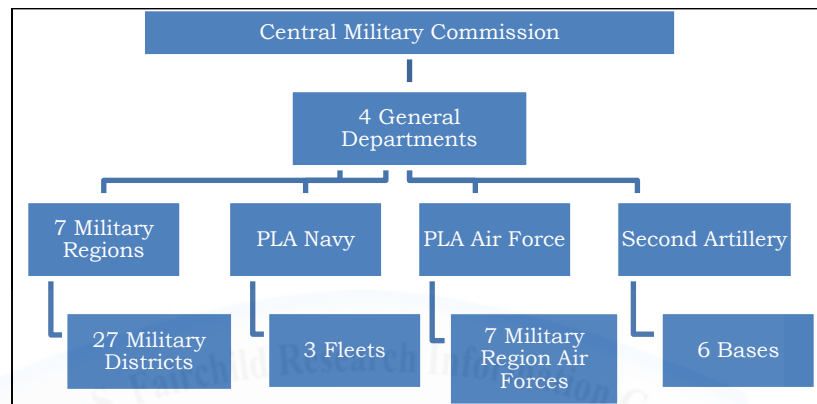


Figure 1: PLA Organizational Structure

Source: Kenneth W. Allen, *China's Air Force Enters the 21st Century* (Santa Monica, CA: Rand, 1995), 14–15.

The PLAAF, as professional service, underwent a major reorganization and streamlining in 1985. Kenneth W. Allen, writing a chapter on PLAAF's organizational structure in the book, *The Chinese Air Force: Evolving Roles and Capabilities*, provides a comprehensive analysis and provides the analytical underpinning to many of the topics within this chapter and thesis. This hierarchal organizational system includes a PLAAF HQ, seven Military Region Air Forces (MRAFs), four branches, and operational and logistics support units.⁴¹ The PLAAF HQ provides “operational, political, and support policy guidance for the strategic, operational, and tactical levels of conflict in both peacetime and

³⁹ Kenneth W. Allen, “PLA Organizational Structure,” n.d., 5.

⁴⁰ Allen, “PLA Organizational Structure,” 9.

⁴¹ Hallion, Cliff, and Saunders, *The Chinese Air Force*, 98.

wartime.”⁴² It is responsible for integrated military operations as well as training and testing.⁴³ The seven MRAFs align with the seven Military Regions (MRs), which distribute the military command structure throughout China. In peacetime, the command structure flows through PLAAF HQs under the supervision of the GDs to the MR. Typically, the MR Air Force Commander is a deputy MR Commander. In wartime or crisis operations, an MR will convert to a theater of war. Under this condition, control of the PLAAF remains subordinate to the MR Commander.⁴⁴ Figure 2 illustrates the seven MRs throughout China.



Figure 2: Seven Military Regions

Source: “Peoples Liberation Army Air Force,” accessed March 20, 2015, <http://www.globalsecurity.org/military/world/china/plaaf-intro.htm>.

The four PLAAF branches are consist of aviation, surface-to-air missile, anti-aircraft artillery, and airborne. There are also five categories of specialty forces, which include communications, radar, electronic countermeasures, chemical defense, and technical reconnaissance.⁴⁵ The PLAFF organizes its operational units into a single

⁴² Allen, *The Chinese Air Force*, 98.

⁴³ Wortzel, *The Dragon Extends Its Reach*, 74.

⁴⁴ Wortzel, *The Dragon Extends Its Reach*, 74.

⁴⁵ Allen, *The Chinese Air Force*, 103.

corps, divisions, brigades, regiments, battalions, companies, and squads.⁴⁶ According to the National Air and Space Intelligence Center, *PLAAF 2010*, since 1986 the PLAAF maintains 29 operational air divisions, which include 20 fighter, 3 ground attack, 3 bomber, and 3 transport divisions.⁴⁷ The current force structure is a significant reduction from the 50 air divisions China had from 1950-1971 and the 43 air divisions the country had from 1971-1985.⁴⁸

PLAAF officers fall under five career tracks: military officer, political officer, logistics officer, equipment officer, and technical officer. These tracks do not have further job classifications similar to Air Force Specialty Codes or Military Occupational Specialties. Military officers serve as unit commanders and staff officers and are responsible for operations, training, intelligence, communications, and the enlisted forces. Political officers serve as political commissars and staff officers in the Political department. They keep track of officer personnel records, security, party discipline, propaganda, and civil-military relations. Logistics officers oversee transportation, finances, housing, airfield management, and medical care. Finally, equipment officers manage research, development, acquisition, and maintenance of military equipment. Technical officers consist primarily as engineers, academics, and medical officers.⁴⁹

The PLAAF codified its current grade and rank structure in 1988. Kenneth Allen summarizes the distinct differences between the PLA and PLAAF's 15-grade and 10-rank structure from the USAF, stating, "In the PLA, grades are more important than ranks...This issue is simple, yet very complicated."⁵⁰ According to *PLAAF 2010*, there are four key

⁴⁶ Allen, *The Chinese Air Force*, 103.

⁴⁷ National Air and Space Intelligence Center, *People's Liberation Army Air Force 2010*.

⁴⁸ Allen, *The Chinese Air Force*, 104.

⁴⁹ Allen, *The Chinese Air Force*, 105.










⁵⁰ Allen, "PLA Organizational Structure," 35.

differences between the US military and the PLA in terms of their use of rank and grade:

1. In the PLA, rank is not as important as grade. The PLA uses rank insignia primarily as a visual cue to quickly determine an individual's status and for interacting with foreign militaries.
2. The PLA assigns billets based on grade, not rank.
3. Promotion in grade, not rank, is what determines career progression.
4. The PLA assigns every organization, not just officers and billets, a grade. Therefore, the grade system is what defines the relationship among organizations.⁵¹

Table 1 and 2 provides illustrations of the PLA officer rank categories and grade structure. Table 3 displays a comparison between the USAF and PLAAF.

Table 1: PLA Officer Rank Categories

PLA Officer Rank Categories																
<ul style="list-style-type: none"> • Like the U.S. military, the PLA divides its 10 officer ranks into three categories <ul style="list-style-type: none"> – Flag rank – Field grade – Company grade • The PLA uses Army ranks and adds Navy or Air Force before the rank <ul style="list-style-type: none"> – Air Force General or Navy General – Navy ranks are translated into English as admiral or ensign 	<table> <tr> <th>Category</th><th>PLA Ranks (All Services)</th></tr> <tr> <td rowspan="3"> Flag-Rank Officer (将官)  </td><td>General (上将) (3 stars)</td></tr> <tr> <td>Lieutenant General (中将) (2 stars)</td></tr> <tr> <td>Major General (少将) (1 star)</td></tr> <tr> <td rowspan="3"> Field-Grade Officer (校官)  </td><td>Senior Colonel (大校)</td></tr> <tr> <td>Colonel (上校)</td></tr> <tr> <td>Lieutenant Colonel (中校)</td></tr> <tr> <td rowspan="4"> Company-Grade Officer (尉官)  </td><td>Major (少校)</td></tr> <tr> <td>Captain (上尉)</td></tr> <tr> <td>1st Lieutenant (中尉)</td></tr> <tr> <td>2nd Lieutenant (少尉)</td></tr> </table>	Category	PLA Ranks (All Services)	Flag-Rank Officer (将官) 	General (上将) (3 stars)	Lieutenant General (中将) (2 stars)	Major General (少将) (1 star)	Field-Grade Officer (校官) 	Senior Colonel (大校)	Colonel (上校)	Lieutenant Colonel (中校)	Company-Grade Officer (尉官) 	Major (少校)	Captain (上尉)	1 st Lieutenant (中尉)	2 nd Lieutenant (少尉)
Category	PLA Ranks (All Services)															
Flag-Rank Officer (将官) 	General (上将) (3 stars)															
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Field-Grade Officer (校官) 	Senior Colonel (大校)															
	Colonel (上校)															
	Lieutenant Colonel (中校)															
Company-Grade Officer (尉官) 	Major (少校)															
	Captain (上尉)															
	1 st Lieutenant (中尉)															
	2 nd Lieutenant (少尉)															

Source: Adapted from Allen, "PLA Organizational Structure," 41.

⁵¹ National Air and Space Intelligence Center, *People's Liberation Army Air Force 2010*, 19–20.

Table 2: PLA Officer Grades

PLA Officer Grades			
Nominal Grade #	Grade	Primary Rank	Secondary Rank
1	Vice Chairman	GEN/ADM	
2	CMC Member	GEN/ADM	
3	Military Region Leader	GEN/ADM	LTG/VADM
4	Military Region Deputy Leader	LTG/VADM	MG/RADM
5	Corps Leader	MG/RADM	LTG/VADM
6	Corps Deputy Leader	MG/RADM	SCOL/SCPT
7	Division Leader	SCOL/SCPT	MG/RADM
8	Division Deputy Leader (Brigade Leader)	COL/CPT	SCOL/SCPT
9	Regiment Leader (Brigade Deputy Leader)	COL/CPT	LTC/CDR
10	Regiment Deputy Leader	LTC/CDR	MAJ/LCDR
11	Battalion Leader	MAJ/LCDR	LTC/CDR
12	Battalion Deputy Leader	CPT/LT	MAJ/LCDR
13	Company Leader	CPT/LT	1LT/LTJG
14	Company Deputy Leader	1LT/LTJG	CPT/LT
15	Platoon Leader	2LT/ENS	1LT/LTJG

Source: Adapted from Allen, “PLA Organizational Structure,” 57.

Table 3: USAF-PLAAF Officer Grade and Rank Categories

USAF-PLAAF Officer Grade and Rank Comparison	
USAF	PLAAF
<ul style="list-style-type: none">• Officer grades and ranks are synonymous<ul style="list-style-type: none">– 10 officer ranks and grades– A lieutenant colonel is an O-5– A 4-star is the highest rank• All billets are assigned a grade• Organizations are not assigned a grade	<ul style="list-style-type: none">• Officer grades and ranks are not synonymous<ul style="list-style-type: none">– The PLA has 10 ranks and 15 grades– A lieutenant colonel can have three different grades– A regiment leader-grade officer can be a lieutenant colonel or colonel– A 3-star is the highest rank• All billets are assigned a grade• All organizations are assigned a grade equal to that of the commander and political officer

Source: Allen, “PLA Organizational Structure,” 10.

Kenneth Allen, in his briefing, “PLA Organizational Structure,” provides an example of a customary introduction with a PLA and PLAAF

officer. He states “when meeting a PLA officer, there are three important pieces of personnel information one should ascertain.”⁵²

- Position or billet
- Rank
- Grade

Therefore, an officer replies:

- I am the Chief of Staff of the Beijing Military Region (position)
- My rank is lieutenant general (rank)
- My grade is MR Deputy Leader (grade)⁵³

Understanding the PLA and PLAAF organizational structures and the historical and bureaucratic impetus behind them are critical to strategy development when attempting to appreciate and potentially counter future PLAAF capability.

Recruitment



Figure 3: PLAAF Pilot Aptitude Testing

Source: Kenneth W. Allen, “PLA Air Force Male Aviation Cadet Recruitment, Education and Training” 12 (March 2, 2012). This process of aptitude testing is similar to the USAF’s pilot candidate selection method.

⁵² Allen, “PLA Organizational Structure,” 40.

⁵³ Allen, “PLA Organizational Structure,” 41.

The PLAAF's Aviator Recruiting Bureau (*Kongjun Zhaofei Ju*), is responsible for all aviation cadet-recruiting activities.⁵⁴ Each MRAF HQ manages its own version of the USAF's undergraduate pilot training (UPT) within its region. The PLAAF has traditionally recruited its aviation cadets from high school graduates and enlisted forces. From 1987-2007, the PLAAF recruited 25,000 high school graduates and 800 college graduates into its aviation cadet program.⁵⁵ Each MRAF HQ managed the flight colleges and transition base in its area of responsibility. Beginning in the early 2000s, the PLAAF gradually introduced new programs to recruit higher educated students from PLA and civilian colleges and universities with expertise in science and engineering.

In early 2010, The PLAAF launched a major recruitment drive. Utilizing 400 recruiters covering 170 locations in 30 of the provinces, autonomous regions and municipalities, 1,100 cadets, including 836 high school graduates, 200 college students and 64 enlisted members enrolled in PLAAF officer colleges.⁵⁶ To attract better-educated aviation cadets, the PLAAF implemented two major steps. First, the PLAAF adjusted the maximum age for recruits. The current maximums for aviation cadets is 20 for high school graduates, 22 for second-year college students, and 24 for military or civilian college graduates.⁵⁷ Second, the PLAAF diversified its applicant pool. Previously, preferred provinces and municipalities was the main discriminator for acceptance into the PLAAF. In 1989, only 14 of 34 provinces, autonomous regions, and municipalities contained representative recruits.⁵⁸ In 2006, that number slightly improved, however, to 16 provinces.⁵⁹ The PLAAF has continued to improve the diversification of its force through the

⁵⁴ Kenneth W. Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," *China Brief* 12, no. 5 (March 2, 2012).

⁵⁵ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 2.

⁵⁶ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 3.

⁵⁷ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 3.

⁵⁸ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 2.

⁵⁹ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 2.

expansion of its recruitment of non-Han Chinese, including minorities in Xinjiang, Inner Mongolia, Yunnan and Qinghai.⁶⁰ Minority cadets, who receive greater scrutiny for political reliability, primarily fly small fixed and rotary-wing aircraft within remote areas of China.⁶¹

Education and Training

For aviation cadets, the PLAAF has incorporated both education and training programs into two tracks. These tracks are based on the aviation cadet's status as a high school graduate (*benke yipi*), or college student (*benke erpi*). The cadets receive a one-time bonus of 3,000 or 5,000 yuan (\$476 or \$794), respectively as compensation for their commitment to service in the PLAAF.⁶²

Aviation cadets complete their version of UPT at the PLAAF's seven flight colleges. Upon completion, enlisted members also receive a Bachelor's in Military Science.⁶³ Each of the seven flight colleges is organized like an operational air division with subordinate regiments, flight groups, and flight squadrons. The colleges average approximately 100 students per year, divided into several basic and advanced trainer regiments.⁶⁴ Kenneth Allen provides a full detailed summary of the seven flight colleges (1-6, and 13):

1. 1st Flight College (Harbin, Heilongjiang) trains transport and bomber (tanker) pilots and navigation and communications officers, which includes six months of basic trainer and one year of advanced trainer training.
2. 2nd Flight College (Huxian, Shaanxi and Jiajiang, Sichuan) trains bomber (tanker), transport (early warning) pilots, navigation officers, other officer, and enlisted crewmembers. Pilot cadets receive six months of training in a basic trainer and one year in an advanced trainer. Navigators receive ten months of navigation theory training followed by one year of transport or bomber training.

⁶⁰ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 2.

⁶¹ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 2.

⁶² Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 3.

⁶³ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 3.

⁶⁴ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 3.

3. 3rd Flight College (Jinzhou, Liaoning) and 5th Flight College (Wuwei, Gansu) train fighter pilots, which includes one year of advanced trainer training. The cadets receive their basic trainer training at the Aviation University's Flight Training Base.
4. 4th Flight College (Shijiazhuang, Hebei), 6th Flight College (Zhuozhou, Hebei) and 13th Flight College (Bengbu, Anhui) train fighter pilots, which includes six months of basic trainer and one year of advanced trainer training.⁶⁵

During the 18 months of flight training, cadets fly approximately 200 to 220 hours, which includes about 80 hours in a basic trainer and 120 to 140 in an advanced trainer. Cadets can fly multiple sorties per day for a maximum of five hours. The PLAAF uses the CJ-6 as its basic trainer for all aircraft. It uses the Y-7 as an advanced trainer for bomber and transport pilots and the K-8 and JJ-5 as a basic advanced trainer for fighter and attack pilots. During transition training, the trainees fly the more advanced JJ-6 and JJ-7 fighter trainers. During this period, they continue their skills training, which include flying over water plus night training under visual flight rules and instrument flight rules. When trainees shift to their permanent operational unit, they transition to that unit's aircraft for skills and tactics training.

⁶⁵ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training," 4.

Female Aviators



Figure 4: PLAAF's First Group of Female Fighter Pilots

Source: Kenneth W. Allen and Emma Kelly, "China's Air Force Female Aviators: Sixty Years of Excellence (1952-2012)," *China Brief* 12, no. 12 (June 22, 2012).

In 1951, China formed an operational unit of female aviators (*feixing renyuan*), and is one of 16 countries with female air force pilots today.⁶⁶ Since the early 1980s, the PLAAF has averaged a new female group of about 30-35 cadets every three years consisting of pilots (*feixingyuan*), navigators (*linghangyuan*), communicators (*tongxinyuan*), and maintenance (*jixieyuan*) crew.⁶⁷

Female aviators join separate education, training, and operational units from their male counterparts. The majority of the all-female crews reside in a single flight group subordinate to the Guangzhou MRAF13th Air Division's 38th Regiment. From the group they conduct charter flights, disaster relief, research-oriented trial flights, and reforestation and cloud seeding.⁶⁸ In 2005, four crews conducted their first drop of

⁶⁶ Kenneth W. Allen and Emma Kelly, "China's Air Force Female Aviators: Sixty Years of Excellence (1952-2012)," *China Brief* 12, no. 12 (June 22, 2012): 1.

⁶⁷ Allen and Kelly, "China's Air Force Female Aviators: Sixty Years of Excellence (1952-2012)," 1.

⁶⁸ Allen and Kelly, "China's Air Force Female Aviators: Sixty Years of Excellence (1952-2012)," 1.

several hundred airborne troops.⁶⁹ Female aviators have continued to promote through the ranks, receive advanced degrees, and become astronauts in the Chinese space program.

In comparison with the USAF, the PLAAF can claim some firsts in the acceptance of female aviators into its core service component. The first female pilots entered the PLAAF in 1952. The Women Air Force Service Pilots flew in World War II on behalf of the United States but never received an active-duty personnel designation. It was not until 1977 that the first active-duty USAF females graduated from UPT and received their wings.⁷⁰ Table 4 provides a comparison of the PLAAF and the USAF.



⁶⁹ Allen and Kelly, “China’s Air Force Female Aviators: Sixty Years of Excellence (1952-2012).”

⁷⁰ Allen and Kelly, “China’s Air Force Female Aviators: Sixty Years of Excellence (1952-2012),” 2.

Table 4: Comparison of PLAAF-USAF Female Aviator Firsts

Female Aviator Firsts	PLAAF	USAF
Transport unit pilot	1952	1977
Bachelor's degree	1993	N/A
Master's degree	2000	1981
Doctorate degree	None	1983
Unit commander	2004	2004
1-star flag officer	2003	2000
Astronaut	2012	1984
Demonstration team member	None (Bayi)	2006 (Thunderbirds)
Fighter pilot	2010	1994
Bomber pilot	None	1995
Combat mission	None	1991

Source: Adapted from Allen and Kelly, "China's Air Force Female Aviators: Sixty Years of Excellence (1952-2012)," 3.

Similar to the USAF, PLAAF's female aviators and support personnel continue to integrate into the PLA's overall combat plans, missions and campaigns. They are training to fly fighters, attack aircraft, helicopters, and combat-support missions. In addition, they are now becoming unit commanders and senior staff officers within most levels of the PLAAF HQ.

Professional Military Education (PME)

While the transformation of the PLA's educational system began in the 1980s, it was the vision of Deng Xiaoping to make PME a strategic

priority for the PLA.⁷¹ In a speech delivered in 1977, Deng lamented the state of military education in the PLA and urged investment in PME.⁷² Re-established after years of neglect, Deng's successor Jiang Zemin formulated the "Two Transformations," which called for the PLA to transform to a force built on quality and a mindset focused on modern, high-tech conditions.⁷³ Hu Jintao followed Deng and Jiang's examples into the 21st century. During Hu's tenure, the PLA launched a new initiative aimed at furthering this objective: the Strategic Project for Talented People.⁷⁴ The goal of this initiative was to develop command officers with the skills required to lead "information wars" and to create staff officers with operational planning and force development skills.⁷⁵

All PLAAF aviators attend intermediate and advanced professional military education for one year at the Air Force Command College in Beijing.⁷⁶ Formed in 1985, a second tier education opportunity is the National Defense University (NDU). The program is analogous to the various War Colleges found in the US branches of the armed services.⁷⁷ PLAAF aviators can also receive a master's degree within and outside military colleges. For example, several J-10 test pilots reportedly received their master's degree at Northwestern Polytechnical University in Xi'an.⁷⁸ These initiatives are central in China's development of a talent pool for future PLA and PLAAF leaders.

⁷¹ Thomas Skypek, "Soldier Scholars: Military Education as an Instrument of China's Strategic Power," *China Brief* 8, no. 4 (February 29, 2008), http://www.jamestown.org/programs/chinabrief/single/?tx_ttnews%5Btt_news%5D=4734&tx_ttnews%5BbackPid%5D=168&no_cache=1#.VGQQlslu2ud.

⁷² Michael Pillsbury, *Chinese Views of Future Warfare* (Honolulu, Hawaii: University Press of the Pacific, 2002), 12.

⁷³ John D. McCrae, "How They Think: PME in the Modern PLA," October 22, 2013, <http://smallwarsjournal.com/jrnl/art/how-they-think-pme-in-the-modern-pla>.

⁷⁴ Skypek, "Soldier Scholars: Military Education as an Instrument of China's Strategic Power."

⁷⁵ Skypek, "Soldier Scholars: Military Education as an Instrument of China's Strategic Power."

⁷⁶ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training."

⁷⁷ McCrae, "How They Think: PME in the Modern PLA."

⁷⁸ Allen, "PLA Air Force Male Aviation Cadet Recruitment, Education and Training."

Leadership

In the PLAAF, a “leader” refers to the commander, political commissar (PC), deputy commanders, deputy PCs, and may include directors of the four departments: (1) Headquarters, (2) Political, (3) Logistics, and (4) Armament Departments.⁷⁹ The current PLAAF commander, Lieutenant General Ma Xiaotian, assumed command in 2012. Table 5 provides a comparison between Ma and the current United States Air Force (USAF) Chief of Staff (CSAF) General Mark Welsh.

Table 5: USAF-PLAAF Commander Comparison

USAF-PLAAF Commander Comparison	
	<ul style="list-style-type: none">• USAF Chief of Staff, Mark A. Welsh III<ul style="list-style-type: none">– Born: 1953– Graduated from Air Force Academy: 1976– General (4 stars): December 2010– 20th CSAF since 1947– Assumed command: August 2012
	<ul style="list-style-type: none">• PLAAF Commander, Ma Xiaotian<ul style="list-style-type: none">– Born: August 1949– Joined PLAAF: 1965 at age 16– General (3 stars): July 2009– 11th commander since 1949– Assumed command: October 2012– CMC Member: October 2012– Mandatory retirement at 19th Party Congress in 2017

Source: Adapted from Kenneth W. Allen, “Assessing the PLA Air Force’s 10 Pillars” (Maxwell Air Force Base, Alabama, September 20, 2013), 8.

The PLAAF currently has five deputy commanders and three deputy PCs. Each represent the seven MRAF HQs with at least two-deputy commanders and one to two deputy PCs.⁸⁰ Together with the director of each of the four departments; these officers comprise the headquarters’ Standing Committee. Table 6 illustrates this relationship and provides an organizational comparison with the USAF.

⁷⁹ Kenneth Allen and Jana Allen, *Chinese Air Force and China Security*, 2015, 5.

⁸⁰ Allen and Allen, *Chinese Air Force and China Security*, 6.

Table 6: USAF-PLAAF Organization Comparison

USAF-PLAAF Organization Comparison	
USAF	PLAAF
<ul style="list-style-type: none"> • Secretariat <ul style="list-style-type: none"> – SECAF • Air staff <ul style="list-style-type: none"> – CSAF – Vice Chief – CMSAF – A1-A10 • 10 MAJCOMS 	<ul style="list-style-type: none"> • Command Staff <ul style="list-style-type: none"> – Commander and Political Commissar – 4-5 Deputy Commanders – 2 Deputy Political Commissars – 4 Departments <ul style="list-style-type: none"> • HQ, Political, Logistics, Equipment • 7 Military Region Air Forces

Source: Adapted from Allen, “Assessing the PLA Air Force’s 10 Pillars,” 9.

The PLAAF has had eleven commanders since 1949. The first four PLAAF commanders, covering 1949-1985, were all PLAA officers who moved into PLAAF command positions. In 1985, Wang Hai became the first aviator selected as the commander.⁸¹ Since then, all of the PLAAF’s commanders have been career aviators. Table 7 shows each commander’s date of birth, the age when they became commander, and the age they left office. With the exception of Liu Yalou, the age for the commanders assuming the position of commander has ranged from 50-63 years old.⁸²

⁸¹ Kenneth W. Allen, *PLA Air Force Organization*, 2000, 18–5.

⁸² Allen, *PLA Air Force Organization*, 18–5.

Table 7: PLAAF Commanders' Ages

Name	Date of Birth	Became Commander	Left Office
Liu Yalou	1910	39	55 (died)
Wu Faxian	1915	50	56 (removed)
Ma Ning	1922	51	55 (replaced)
Zhang Tingfa	1918	59	67 (retired)
Wang Hai	1925	60	65 (retired)
Cao Shuangming	1929	63	65 (retired)
Yu Zhenwu	1931	63	65 (retired)
Liu Shunyao	1939	57	62 (retired)
Qiao Qingchen	1939	62	69 (served as CMC member)
Xu Qiliang	1950	52	57 (promoted to CMC Vice-Chairman)
Ma Xiaotian	1949	63	Currently in position

Source: Adapted from Allen, PLA Air Force Organization, 18-5.

The PLAAF has made a concerted effort at reducing the age of its leadership. In 1988, almost two-thirds of the 32 lieutenant generals promoted were over 60. Today, the average age of PLAAF lieutenant generals (highest rank) is approximately 57, signaling an emphasis on a younger leadership core. By comparison, senior USAF leaders entered the Air Force from 1976-1982, and the service promoted them to general between ages of 54 and 56 years old.⁸³ While the PLAAF has succeeded in reducing the overall age of its leaders, it has lost all of its leaders with any operational wartime experience. Since the air campaign against UN forces during Korean War, the 1958 conflict against the Nationalists in

⁸³ "Air Force Senior Leader Biographies," accessed March 31, 2015, <http://www.af.mil/AboutUs/Biographies.aspx>.

the Taiwan Strait, and a handful of air engagements during the Vietnam War, military professionals in the PLAAF have not experienced combat.

Since the early 2000s, under renewed modernization efforts, the PLA has increased the number of assignments of PLAAF general officers to key national-level military.⁸⁴ These traditionally army-dominated positions, filled by PLAAF and PLAN members, signal a paradigm shift within the larger PLA structure. This shift reflects an emphasis on jointness in the make-up of its national-level leadership relative to the past.⁸⁵ Prior to 2004, only three of the PLAAF's commanders, Liu Yalou, Wu Faxian, and Zhang Tingfa, have served as a member of the CMC.⁸⁶ In September 2004, the CMC added the commander of the PLAN, PLAAF, and SAC as permanent members. Since then, PLAAF commanders have traditionally served within the CMC once they relinquished command.⁸⁷

In order to become an effective flying force, the PLAAF has undergone numerous internal modernization efforts, focusing on changes in organization, recruitment, education, training, and leadership. Rapid growth in China's economy has allowed for a greater investment in weapons and technology. The PLAAF is attempting to ensure it modernizes its organizational structure and quality of personnel in order to maximize the utility of these growing capabilities. Chapter Four further elucidates the transition from an effective flying force into a military apparatus that can fight and win wars.

⁸⁴ National Air and Space Intelligence Center, *People's Liberation Army Air Force 2010*, 47–50.

⁸⁵ National Air and Space Intelligence Center, *People's Liberation Army Air Force 2010*, 49–50.

⁸⁶ National Air and Space Intelligence Center, *People's Liberation Army Air Force 2010*, 49–50.

⁸⁷ National Air and Space Intelligence Center, *People's Liberation Army Air Force 2010*, 50.

Chapter 4

The Dragon Learns to Fight and Win

A weaker force relying solely on the defensive would place itself in the position of having to receive blows, and that only by taking offensive operations, could the weaker seize the initiative

CMC Official

This chapter focuses on three important themes that are necessary for the PLAAF to fight and win its nation's wars. Those themes are: (1) military professionalism, (2) pilot autonomy, and (3) joint operations. These themes are critical components to train and conduct the PLAAF's emerging mission requirements to effectively: "transition from an air force focused on territorial defense toward an air force that increasingly emphasizes offensive missions and trying to seize and maintain the initiative in its combat missions."¹

Military Professionalism

Of the three themes presented in this chapter, military professionalism gets to the core of the PLAAF's ability to organize, train, and equip to be an effective fighting force. First, it is necessary to define military professionalism in order to have a shared understanding of its context. Samuel P. Huntington, in his book, *The Soldier and the State*, states "The modern officer corps is a professional body, and the modern military officer, a professional man. This is, perhaps, the most fundamental thesis of this book."² Huntington stresses that professionalism is a binding relationship between society and the servants to whom society relies upon. In the case of the military, specifically the officer corps, they evaluate the security of the state while providing expert advice to its leaders. In turn, society has a

¹ Hallion, Cliff, and Saunders, *The Chinese Air Force*.

² Samuel P. Huntington, *The Soldier and the State: The Theory and Politics of Civil-Military Relations* (Cambridge: Belknap Press of Harvard University Press, 1957), 7.

responsibility to provide deference to their professional expertise and institutions.³ Huntington further defines professionalism in terms of three attributes: expertise, responsibility, and corporateness.

1. Expertise: requires a prolonged period of education and experience; professional knowledge is intellectual and capable of preservation in writing.
2. Responsibility: the professional is a dutiful arm of the nation-state, subordinate to civilian authority; professionals wield their expertise when required by society.
3. Corporateness: professionals share a collective esprit-de-corps and awareness apart from general society; the profession establishes formalized standards and restricts entrance; complex institutions ensure specialization of labor and responsibilities.⁴

The PLAAF possess these three attributes as regionally focused pockets within the MRAFs, not as a collective organization. While researching this thesis, numerous experts described the PLAAF in terms of the US Air National Guard's (ANG) relationship to state and federal command and control (C2). The ANG is a federal military reserve force as well as the militia force of each US state, the District of Columbia, the Commonwealth of Puerto Rico, and the territories of Guam and the U.S. Virgin Islands. When used under the jurisdiction of the State Governor, ANG units are fulfilling their militia role. If federalized by the US President, however, ANG units become an active part of the USAF. The PLAAF have historically fragmented along territorial lines supporting its respective MRAF. Similar to the US ANG's militia force supporting the state, it has focused its support primarily on its provincial territory in a peacetime posture.

As discussed in previous chapters, historically, the PLAAF organized itself under a Soviet or Russian model. The largest operational unit within the aviation branch is the air division divided by the "three-

³ Huntington, *The Soldier and the State*, 14.

⁴ Huntington, *The Soldier and the State*, 7–10.

in-one principle.”⁵ An air division contains three subordinate air regiments, each located at a separate airfield. Each regiment organizes into three subordinate flight groups. Each flight group divides into three flight squadrons.⁶ According to SinoDefence’s report, “PLAAF converting air divisions into brigades:”

Under this structure, the air division is usually a ‘single-purpose’ unit, i.e. fighter, attacker, bomber, or transport, equipped with aircraft of a similar role. The air regiment is normally a single-type unit, equipped with a single type of aircraft (sometimes with both single- and two-seater variants) and normally occupies a ‘home’ airfield. As a result, the air station is structured to support a single type of aircraft.⁷

Under this single type aircraft structure, pilots become proficient in flying with their wingmen but have limited to no experience flying with or against pilots flying dissimilar aircraft. Even worse, pilots rarely train with units from different MRAFs. Similar to the ANG where individuals tend to reside in the same units for most of their career, PLAAF aviators have limited ability to move between bases within or outside of their respective MRAFs. Due to the US’s professionalized military and its ability to train and fight interchangeably with other ANG and active duty units, the institutional inertia that effect the PLAAF’s ability to be interoperable do not apply.

Recognizing the need to adapt to compete with modern air forces, changes to the PLAAF’s military professionalism became necessary. In 2011, as part of its modernization-restructuring program, the PLAAF has begun to convert its air divisions into more combined and flexible air brigades similar to air wings in the USAF. This is possibly the most significant organizational change in the history of the PLAAF with the aim to achieve a more flat administrative and C2 structure.

The new structure attempts to address the issue by removing a layer from the chain of command. An air brigade is most likely going to be a

⁵ “PLAAF Converting Air Divisions into Brigades,” *SinoDefence*, accessed March 18, 2015, <http://sinodefence.com/2014/01/05/plaaf-converting-air-divisions-into-brigades/>.

⁶ Kenneth W. Allen, *PLA Air Force Organizational Reforms: 2000-2012*, 2012, 25.

⁷ “PLAAF Converting Air Divisions into Brigades.”

combined operational unit, consisting of several flying groups or squadrons of various types of aircraft, e.g. fighter, attacker and reconnaissance.⁸

The implementation of air brigades supporting multiple types of aircraft does not come without risk. Prior to 2012, the majority of aviation units consisted of the same aircraft, so logistics, maintenance, and spare parts were consistent. Under the air brigade transformation, multiple types of aircraft require overhauls in the PLAAF's traditional operating procedures. Retraining of current personnel or the addition of new personnel is required to meet these new maintenance and logistics requirements. Similar to those changes described above, flying operations require an overhaul to transition to a more offensive-minded air force focused on maintaining initiative.

Pilot Autonomy

The Oxford Dictionary defines initiative as “the ability to assess and initiate things independently.”⁹ The same source defines autonomy as “freedom from external control or influence; independence.”¹⁰ Pilot autonomy is the ability for a pilot to assess and initiate combat maneuvers free of external control or influence. Since 1949, and described in Chapter Three, the PLAAF has adjusted its organization, recruitment, education, training, and leadership in order to become an effective flying force. It had been reluctant, however, to provide autonomy to its pilots. Basic functions such as flight planning, initiating critical phases of flight (engine start, take-off, landing), basic flight maneuvers, and intercepts are strictly controlled by unit leadership (e.g., flight commanders) positioned in the control towers.

⁸ “PLAAF Converting Air Divisions into Brigades.”

⁹ “Initiative: Definition of Initiative in Oxford Dictionary (American English) (US),” accessed March 19, 2015, http://www.oxforddictionaries.com/us/definition/american_english/initiative.

¹⁰ “Autonomy: Definition of Autonomy in Oxford Dictionary (American English) (US),” accessed March 19, 2015, http://www.oxforddictionaries.com/us/definition/american_english/autonomy.

Figure 5 provides an example of those flight commanders in action. The PLAAF has identified this overall control as the “nanny model.”¹¹ To become that offensive force and maintain initiative, it has recently begun reforms to continue that transition into a military apparatus that can fight and win its nations wars.



Figure 5: Flight Commanders in Control Tower

Source: Kenneth W. Allen, “Tracking Pilot Wang: A Profile of PLA Air Force and Naval Aviation Pilots” (Maxwell Air Force Base, Alabama, November 25, 2014), 12.

Kenneth Allen, in his paper, “New Concepts of Pilot Autonomy and Separating Tactics Flight Command from Air Traffic Control Responsibilities in the Control Tower,” describes a shift toward pilot autonomy through the establishment of “free air-combat:”

Besides adjusting the force structure, the most significant reform has been to begin providing pilots in all air units (divisions, brigades, regiments, and flight groups and squadrons) with the “autonomy” to create their own flight plans, taxi out and take off without strict guidance, to conduct “free air-combat” while implementing the flight plan, and then land without strict guidance from a senior officer in the tower. The PLAAF has also created a position identified as an airborne commander, who is the lead pilot of two formations. Although little information is available, it appears the PLAAF is allowing more autonomy

¹¹ Kenneth W. Allen, *Assessing the PLA Air Force’s New Concepts of Pilot Autonomy and Separating Tactics Flight Command from Air Traffic Control Responsibilities in the Control Tower* (Center for Intelligence Research and Analysis, August 2012), 12.

to airborne commanders to make decisions and adjustments once the aircraft are airborne.¹²

This concept of free air-combat is on a path of institutionalization through certification and training. As of May 2013, the PLAAF is requiring that its pilots, who participate in free air-combat training, pass a human centrifuge, and obtain a free air-combat certificate. According to Luo Yongchang, head of the aviation medicine institute under the PLAAF, “through the systematic training, the pilots can improve their aviation physiology, psychological quality and comprehensive ability to handle special situations in the air, and can determine tactics independently and achieve the goal during free air-combat training.”¹³ The openness to free-air combat provides the pilot autonomy required to enable the PLAAF to become a more effective flying force while opening the door to joint operations.

Joint Operations

Within joint operations, three concepts have focused the PLAAF’s modernization efforts to leverage its range of military capabilities: (1) the US Red Flag Training Exercises, (2) Operation Desert Storm, and (3) the East China Sea Air Defense Identification Zone (ADIZ). While there are many other concepts that provide increased awareness and concern amongst Chinese civilian and military leadership, these three concepts require complex cooperation amongst the respective services to implement and properly execute.

Red Flag

In 1975, unsatisfied with the performance of air combat maneuvering in Vietnam, the USAF funded a study known as Project Red Baron II. The results of that study showed that a pilot's chances of survival in combat dramatically increased after he had completed 10

¹² Allen, *Assessing the PLA Air Force’s New Concepts of Pilot Autonomy and Separating Tactics Flight Command from Air Traffic Control Responsibilities in the Control Tower*, 1.

¹³ “Why PLA Organizes Free Air-Combat Confrontation Drill,” *English.news.cn*, September 16, 2014, http://news.xinhuanet.com/mil/2014-09/16/c_126990464.htm.

combat missions.¹⁴ Because of this analysis, Red Flag became the solution to provide USAF pilots the opportunity to fly 10 simulated combat missions in a safe and realistic training environment. Today, Red Flag is an advanced joint aerial combat training exercise hosted at Nellis Air Force Base, Nevada and Eielson Air Force Base, Alaska. The United States revolutionized air power, pitting a rotating contingent of friendlies (Blue Force) against enemy ground and air defenses (Red Force), simulating the tactics of potential enemy militaries. Red Flag has the reputation of being more difficult than real war and drives many of the tactics, techniques, and procedures that the US military uses in combat. This display of joint interoperability is the subject of great envy by the Chinese and has become the model in which to attempt to copy. David Axe's report, "China's Increasingly Good Mock Air Battles Prep Pilots For Real War," describes the PLAAF implementation of the Red Flag model:

At first, Beijing was unable to copy the Americans' training innovations. The Chinese air force was wedded to highly restrictive Soviet-style tactics emphasizing direct control of warplanes by ground-based commanders, as opposed to the greater freedom of action and potential for learning afforded U.S. aviators.

Incrementally, and without much notice outside of China, the PLAAF transformed routine flight training into the regular Red Sword/Blue Sword mock air battles, modeled on Red Flag. By 2005, Beijing's war games were well underway. And a few years after that, the frontline improvements began to show.¹⁵

The PLAAF has recently implemented a Top Gun-style program into their training scenarios. In November of 2012, 108 pilots from 14 fighter regiments, alongside bomber and support unit detachments, participated in Red Sword/Blue Sword exercises in Dingxin. After 10 days of flying, the 11 best pilots received the prestigious Golden Helmet

¹⁴ *Project RED BARON II, Air to Air Encounters in Southeast Asia* (USAF Tactical Fighter Weapons Center, January 1973), 2.

¹⁵ David Axe, "China's Increasingly Good Mock Air Battles Prep Pilots for Real War," *WIRED*, February 7, 2013, <http://www.wired.com/2013/02/china-mock-air-war/>.

award. The ability to provide realistic combat training and award tactical prowess provides all arms of the PLA the ability transition from peacetime to wartime scenarios. The Chinese saw this transition first hand when the United States executed Operation Desert Storm.

Operation Desert Storm

The hard lessons of the limited wars of Korea and Vietnam provoked the USAF to shift its emphasis from strategic to tactical applications of air power and promote Tactical Air Command (TAC) as the prominent command. Prior emphasis on nuclear deterrence and strategic bombardment during the Cold War proved fruitless in this new era of limited warfare. This transition occurred in parallel with the development of an army-led doctrinal concept called AirLand Battle. Keith Shimko states “The goal of AirLand Battle was...to pursue an aggressive counteroffensive consisting of coordinated, rapid, and simultaneous land and aerial assaults on the full range of front and rear echelon Soviet forces...hopefully without the resort of nuclear weapons.”¹⁶ When Iraq invaded Kuwait on 2 August 1990, US planners raced to develop an air power concept-of-operation to remove Iraq from Kuwait and destroy its war fighting capability.

TAC planners developed a concept in line with the accepted AirLand Battle Doctrine.¹⁷ Strategic bombing advocates, however, forged their way back into the campaign planning process. Col John Warden and fellow Air Staff members at Checkmate “suggested an effects-based, war-winning air campaign concept that sought to paralyze the Iraqi regime and its leadership.”¹⁸¹⁹ Warden’s plan “Instant Thunder,” based on his

¹⁶ Keith L. Shimko, *The Iraq Wars and America’s Military Revolution* (New York, NY: Cambridge University Press, 2010), 46.

¹⁷ John Andreas Olsen, *John Warden and the Renaissance of American Air Power*, 1st ed (Washington, D.C: Potomac Books, 2007), 140.

¹⁸ Checkmate is a strategic focus group that directly supports the chief of staff and Air Force leaders with independent, critical assessment of proposed strategic actions.

¹⁹ Olsen, *John Warden and the Renaissance of American Air Power*, 140.

Five-Rings Model, targeted enemy centers of gravity with precision attacks.²⁰ Warden's camp believed that precision guided munitions, stealth, and superior intelligence, surveillance, and reconnaissance made it possible to prosecute an overwhelming surgical strategic bombing campaign to force the Iraqi regime into capitulation and liberate Kuwait with minimal bloodshed on the ground.²¹

As a counterbalance to Warden's strategic emphasis, General Charles Horner, the Joint Force Air Component Commander, incorporated Instant Thunder as one phase of a three-phased air campaign plan. This plan would achieve air superiority and destroy high-value targets while supporting the ground campaign to destroy Iraqi ground forces.²² The campaign plan was an overwhelming success and included a five-week air campaign and ground assault lasting a mere 100 hours.²³ This combination of Warden's Instant Thunder and AirLand Battle doctrine proved decisive.

The overwhelming role of air power during Operation Desert Storm not only shattered the view of an air force as a defensive force, but also solidified the synergistic value of joint operations. The United States performance severely undermined traditional Chinese views that inferior forces could outthink a superior enemy.²⁴ In 1993, the CMC adjusted the PLAAF's strategic missions previously centered on defensive operations. The new mission requirements included: maintain air superiority within China's airspace, support army and navy forces, direct combat paratroop operations, carry out independent air campaigns, and launch offensive operations on enemy air assets on the ground along China's coast.²⁵ These requirements guided emphasis on the PLAAF's

²⁰ Olsen, *John Warden and the Renaissance of American Air Power*, 149.

²¹ Olsen, *John Warden and the Renaissance of American Air Power*, 181.

²² Olsen, *John Warden and the Renaissance of American Air Power*, 192.

²³ Shimko, *The Iraq Wars and America's Military Revolution*, 75.

²⁴ Olsen, *Global Air Power*, 284.

²⁵ Olsen, *Global Air Power*, 285.

transition from defensive to offensive-minded operations in a joint environment.

East China Sea ADIZ

China's Ministry of National Defense announced the establishment of the East China Sea ADIZ on November 23, 2013, without any consultation with its neighbors in the region. Figure 6 identifies the geographic confines of the ADIZ juxtaposed with Japan's declared boundaries.



Figure 6: East China Sea ADIZ

Source: Madison Park, "Why China's Air Zone Incensed Japan, U.S.," CNN.com, November 27, 2013, <http://edition.cnn.com/2013/11/25/world/asia/china-japan-island-explainer/>.

China's rules-of-engagement dictate that any aircraft flying in the ADIZ must: (1) report a flight plan to the Chinese government, (2) maintain radio communication and respond to identification inquiries from the Chinese government, (3) maintain radar transponder function, and (4) exhibit clear nationality and logo markings.²⁶ The announcement

²⁶ June Osawa, "China's ADIZ over the East China Sea: A 'Great Wall in the Sky'?", Brookings Institution, December 17, 2013, <http://www.brookings.edu/research/opinions/2013/12/17-china-air-defense-identification-zone-osawa>.

warned, “China’s armed forces will adopt defensive emergency measures to respond to aircraft that do not cooperate in the identification.”²⁷ The ability to conduct “defensive emergency measures” required not only PLAN, but also PLAAF mutual support. According to the China Military Online article, “Why PLA organizes free air-combat confrontation drill:”

Effective control of the ADIZ can only be achieved when there is close cooperation between the PLAN and PLAAF. In April 2014, the PLAN and PLAAF had their first joint search in the same mission area in the search of Malaysia Airlines MH370 in the southern Indian Ocean. In this mission, direct communication links have been established between the naval and air forces.²⁸

Since the establishment of the ADIZ, there has been an increase in combined PLAAF and PLAN exercises. In 2013, the Nanjing and Guangzhou MRs led Mission Action 2013. This multi-week exercise highlighted multiple air-naval operations objectives: (1) long-range mobility, (2) logistics, (3) air-to-air and air-to-ground engagements, and (4) amphibious landing operations under realistic wartime conditions.²⁹ On 15 September 2014, the PLAAF and PLANAF planned their first free air-combat drills. As China expands its territorial boundaries, the frequency and scope of these joint exercises will increase in numbers and complexity.

In order to transition from merely a flying force to a military apparatus able to fight and win its nations wars, the PLAAF had to undergo a doctrinal paradigm shift. Through military professionalization, pilot autonomy, and joint operations, the service component has taken steps to “transition from an air force focused on territorial defense toward an air force that increasingly emphasizes

²⁷ John Ruwitch, “China Bolsters East China Sea Claim, Warns of ‘Defensive Measures,’” *Reuters*, November 23, 2013, <http://www.reuters.com/article/2013/11/23/us-china-japan-idUSBRE9AM02920131123>.

²⁸ “Why PLA Organizes Free Air-Combat Confrontation Drill.”

²⁹ Office of the Secretary of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2014*, 12.

offensive missions and trying to seize and maintain the initiative in its combat missions.”³⁰ Despite these changes, PLAAF pilots only fly an average of 120-130 hours per year while their USAF counterparts average significantly more.³¹ A disparity in realistic wartime preparation will continue to be a losing proposition for the PLAAF unless there is an increase prioritization in PLAAF capability.



³⁰ Hallion, Cliff, and Saunders, *The Chinese Air Force*.

³¹ Olsen, *Global Air Power*, 291.

Chapter 5

Conclusions and Recommendations

China is a sleeping giant. Let her sleep, for when she wakes she will move the world.

Napoleon

In March of 2014, nearly 200 years after Napoleon made that prolific quote, Xi Jinping announced on French soil, “the sleeping lion has woken up.”¹ An increase in Chinese political, military, and economic influence has invigorated the country’s pursuit of power. As China extends its interests outside its borders, it must have an effective military apparatus in which to protect them. Research conducted for this thesis focused on internal characteristic changes that could increase the formidability and preeminence of the PLAAF within the PLA and against foreign adversaries.

By evaluating these internal characteristic changes, the research identified several improvements and limiting factors within the PLAAF. This data is critical in answering the research question proposed for this thesis: To what extent do the modernization efforts of the PLAAF enable it to fight and win wars? The four key questions proposed in Chapter One will now be addressed followed by recommendations for further study and a conclusion.

How has history shaped China’s cultural, political, and military apparatus?

Maintaining order through effective rule has driven China’s military modernization strategy to focus on the control of its interests in the Asia-Pacific region and beyond. From Mao’s inward approach of active defense to Xi’s outward approach to fight and win wars, China’s strategic culture development, political progression, and military

¹ “Xi Jinping Is Awakening China[4]- Chinadaily.com.cn,” accessed March 20, 2015, http://www.chinadaily.com.cn/opinion/2014-08/19/content_18447626_4.htm.

modernization, are key components in increasing PLAAF capability and lethality. Xi's three-part instructions to emphasize the party's strict span of control (obey commands), demand military proficiency (fight vicious battles), and focus on improving its work ethic (have a good style), display his commitment to creating and maintaining an effective military. Recent anti-corruption campaigns have removed toxic senior leadership within the PLA, which indicates that the PLAAF has begun to implement Xi's instructions.

What internal improvements has the PLAAF undertaken to modernize its force?

Aside from cultural and political changes, the PLAAF has undergone numerous internal modernization efforts in order to become an effective flying force. With respect to changes in organization, recruitment, education, training, and leadership, these efforts include:

1. Constitution of a PLAAF HQ and seven MRAFs provide operational, political, and policy guidance.
2. Increase of officer recruitment programs to attract a higher educated pool of talent, which includes civilian colleges and universities in addition to high schools and the enlisted force.
3. Officer recruitment drives to promote diversity within the ranks, especially female and minority recruitment.
4. Reduce the age of leadership within the PLAAF to allow officers to start and complete their PLAAF tours earlier, allowing for follow-on leadership opportunities within the CMC.

With respect to military professionalism, pilot autonomy, and joint operations, Chinese efforts to modernize include:

1. Conversion of air divisions into air brigades to incorporate multiple types of aircraft, missions, and roles under the same command structure.

2. Incorporation of free air-combat exercises to provide the pilot the autonomy to rely less on close-controlled C2 while allowing for dynamic operations.
3. Implementation of Red Flag-style joint exercises and a Golden Helmet challenge to improve realistic wartime training scenarios.
4. The establishment of an ADIZ allows China to identify and control potential air threats within its area of operations while improving joint interoperability between PLAAF and PLAN forces.

What limiting factors affect the PLAAF's ability to fight and win wars?

Limiting factors exist limiting its ability to transition to a joint-capable and autonomous offensive and defensive force:

1. Maintaining party control as the primary objective of the PRC weakens modernization efforts within the PLA and PLAAF.
2. A lack of a coherent grand-strategy projects an image of uncertainty within the PLA.
3. PLAA leadership overwhelmingly commands the PLA, despite increases in PLAAF and PLAN service responsibility.
4. Current PLAAF leadership has zero wartime experience, resulting in gaps of operational expertise.
5. A deficiency of professionalization within the PLAAF prevents aviators from effectively operating outside of its localized command structure.
6. The Air Brigade structure has exposed weaknesses in logistics, maintenance, and spare part control.
7. Advancements in pilot autonomy are insufficient to challenge United States and other Asia-Pacific actors outside of a close-controlled environment.
8. The PLAAF flying hour program is insufficient to maintain an effective flying force due to a lack of experience under realistic wartime conditions.

9. Joint Operations training is insufficient to execute a cross-domain operation outside of a close-controlled environment.

What impact does this have on United States power projection in the Pacific?

China's leaders instituted internal changes to the PLAAF's organization, recruitment, education, training, and leadership. These capabilities along with investments in new generations of multi-role fighters have reduced the capabilities gap with the United States and other Asia-Pacific actors. In the near future, this increased capability will allow the PLAAF to operate independently or in conjunction with other services, to contest the United States and its allies, and decrease the United States' ability to project power and influence in the Asia-Pacific region.

Recommendations for Further Study

In order to provide additional sources of academic rigor for future strategy development and foster the growth of expertise within the USPACOM area of responsibility, further study is required in two key areas. First, further study on the effects of recent changes to the PLAAF's enlisted and conscription forces could be beneficial. Modernization of China's enlisted and conscription forces may increase the education and training opportunities within the service, and help mitigate the maintenance and logistics challenges of operating dissimilar aircraft. Second, the modernization efforts of the PLAA, PLAN, and SAC, are ripe for study.

Conclusion

The PLA is the instrument by which the PRC retains power. As Mao stated, "Our principle is that the Party commands the gun, and the gun will never be allowed to command the Party."² Recent modernization efforts have driven a Chinese military strategy that focuses on controlling

² Mao Tse-Tung, *Problems of War and Strategy*, vol. II, Selected Works, 1938, 224.

the party's interests at home and in the Asia-Pacific region. The PLAAF, as one tool of this power source, is diversifying its role and missions to meet that strategy. It is transitioning from a force that has been almost exclusively responsible for air defense, interdiction, and close air support of ground forces toward a service that values professionalism, practices pilot autonomy, and executes joint operations in support of China's regional power interests.

The paradigm shift that General Vandenberg witnessed during the Korean War led him to proclaim that the Chinese Air Force had "become one of the major air powers of the world" seemingly overnight.³ The research question of this thesis centered on "to what extent does PLAAF modernization efforts enable it to fight and win wars?" Based on the metrics of improvement and limiting factors, the author's thesis is that modernization efforts have introduced significant improvements in the PLAAF's ability to organize, train, and equip. Institutional barriers, however, prevent the PLAAF from transitioning into a joint-capable and autonomous offensive and defensive force. These barriers to change will continue to inhibit the PLAAF's formidability and preeminence for the near future despite increases in investment and leadership directives.

³ Xiaoming Zhang, *Red Wings over the Yalu China, the Soviet Union, and the Air War in Korea* (College Station, TX: Texas A&M University Press, 2002), 12; and John Andreas Olsen, ed., *Global Air Power*, 1st ed (Washington, D.C: Potomac Books, 2011), 259.

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